

=> fil reg

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STRUCTURE FILE UPDATES: 6 JAN 2010 HIGHEST RN 1201136-14-2
 DICTIONARY FILE UPDATES: 6 JAN 2010 HIGHEST RN 1201136-14-2

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TSCA INFORMATION NOW CURRENT THROUGH June 26, 2009.

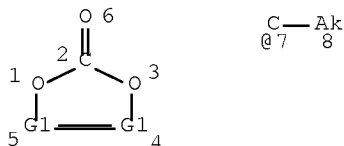
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 conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
 predicted properties as well as tags indicating availability of
 experimental property data in the original document. For information
 on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stdoc/properties.html>

=> d sta que 123

L20 2628 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 16.326.4/RID
 L21 STR



VAR G1=C/7

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS UNLIMITED

GRAPH ATTRIBUTES:

RSPEC 1

NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L23 207 SEA FILE=REGISTRY SUB=L20 CSS FUL L21

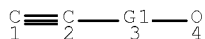
100.0% PROCESSED 1951 ITERATIONS
 SEARCH TIME: 00.00.01

207 ANSWERS

=> => d 146

L46 HAS NO ANSWERS

L46 STR



VAR G1=AK/CB

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS UNLIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 14:20:40 ON 07 JAN 2010

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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FILE COVERS 1907 - 7 Jan 2010 VOL 152 ISS 2

FILE LAST UPDATED: 6 Jan 2010 (20100106/ED)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Oct 2009

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Oct 2009

HCAPLUS now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2009.

CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 167 bib abs hitstr tot

L67 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2005:76450 HCAPLUS Full-text

DN 142:180441

TI Nonaqueous electrolyte solution for secondary lithium battery and the battery

IN Abe, Koji; Miyoshi, Kazuhiro; Kuwata, Takaaki

PA Ube Industries, Ltd., Japan

SO PCT Int. Appl., 48 pp.

CODEN: PIXXD2

DT Patent
LA Japanese
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|------------------|--------------|
| PI | WO 2005008829 | A1 | 20050127 | WO 2004-JP10194 | 20040716 <-- |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | CA 2532579 | A1 | 20050127 | CA 2004-2532579 | 20040716 <-- |
| | EP 1650826 | A1 | 20060426 | EP 2004-747660 | 20040716 <-- |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR | | | | |
| | CN 1853307 | A | 20061025 | CN 2004-80026556 | 20040716 <-- |
| | CN 100517853 | C | 20090722 | | |
| | ZA 2006000431 | A | 20070425 | ZA 2006-431 | 20060116 <-- |
| | IN 2006CN00200 | A | 20070629 | IN 2006-CN200 | 20060116 <-- |
| | KR 2006035767 | A | 20060426 | KR 2006-701080 | 20060117 <-- |
| | US 20060177742 | A1 | 20060810 | US 2006-564852 | 20060117 <-- |
| | IN 2007CN04612 | A | 20080328 | IN 2007-CN4612 | 20071016 <-- |
| PRAI | JP 2003-198421 | A | 20030717 | <-- | |
| | JP 2003-383403 | A | 20031113 | <-- | |
| | WO 2004-JP10194 | W | 20040716 | <-- | |
| | IN 2006-CN200 | A3 | 20060116 | | |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 142:180441

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The electrolyte solution contains 0.01-10% vinyl carbonate compound I (R1 and R2 = H or C1-4 alkyl groups) and 0.01-10% alkyne compds. selected from II-VII (R's and Y's defined; and x and p = 1 or 2).

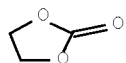
IT **96-49-1, Ethylene carbonate**
108-32-7, Propylene carbonate

RL: DEV (Device component use); USES (Uses)

(electrolyte solns. containing vinyl carbonate derivs. and alkyne compds. for secondary lithium batteries)

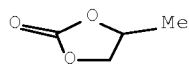
RN **96-49-1** HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)

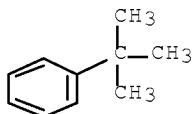


RN **108-32-7** HCAPLUS

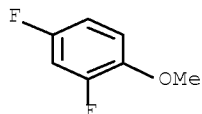
CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



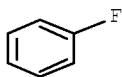
IT 98-06-6, tert-Butylbenzene 452-10-8,
 2,4-Difluoroanisole 462-06-6, Fluorobenzene 827-52-1
 , Cyclohexylbenzene 872-36-6, **Vinylene**
carbonate 2049-95-8, tert-Amylbenzene
 61764-71-4 79493-91-7, **Dipropargyl carbonate**
 RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte solns. containing vinyl carbonate derivs. and alkyne compds.
 for secondary lithium batteries)
 RN 98-06-6 HCAPLUS
 CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



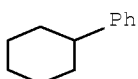
RN 452-10-8 HCAPLUS
 CN Benzene, 2,4-difluoro-1-methoxy- (CA INDEX NAME)



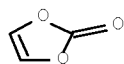
RN 462-06-6 HCAPLUS
 CN Benzene, fluoro- (CA INDEX NAME)



RN 827-52-1 HCAPLUS
 CN Benzene, cyclohexyl- (CA INDEX NAME)



RN 872-36-6 HCAPLUS
 CN 1,3-Dioxol-2-one (CA INDEX NAME)


$$\begin{array}{c} \text{Ph} \\ | \\ \text{Me}-\text{C}-\text{Et} \\ | \\ \text{Me} \end{array}$$
$$\text{MeO}-\overset{\text{O}}{\parallel}{\text{C}}-\text{O}-\text{CH}_2-\text{C}\equiv\text{CH}$$
$$\text{HC} \equiv \text{C} - \text{CH}_2 - \text{O} - \overset{\text{O}}{\parallel} \text{C} - \text{O} - \text{CH}_2 - \text{C} \equiv \text{CH}$$

L67 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2010 ACS on STN
AN 2002:674628 HCAPLUS Full-text
DN 137:188305
TI Nonaqueous secondary battery having enhanced discharge capacity retention
IN Hamamoto, Toshikazu; Abe, Koji; Takai, Tsutomu; Matsumori,
Yasuo; Ueki, Akira
PA Ube Industries, Ltd., Japan
SO U.S. Pat. Appl. Publ., 13 pp., Cont.-in-part of U.S. Ser. No. 631,518.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 3

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|----------------|------|----------|-----------------|----------|
| PI | US 20020122988 | A1 | 20020905 | US 2001-21130 | 20011022 |
| | US 6866966 | B2 | 20050315 | | |
| | JP 2001052735 | A | 20010223 | JP 1999-219708 | 19990803 |
| | JP 3444243 | B2 | 20030908 | | |
| | JP 2002134167 | A | 20020510 | JP 2000-321146 | 20001020 |
| | JP 2002203594 | A | 20020719 | JP 2000-363656 | 20001129 |

PRAI JP 1999-219708 A 19990803
 US 2000-631518 A2 20000803
 JP 2000-321146 A 20001020
 JP 2000-335946 A 20001102
 JP 2000-363656 A 20001129

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 137:188305

AB The discharge capacity retention of a nonaq. secondary battery is enhanced by incorporating into its nonaq. electrolytic solution a small amount of a substituted diphenyldisulfide derivative in which each of the di-Ph groups has a substituent such as alkoxy, alkenyloxy, alkynyloxy, cycloalkyloxy, aryloxy, acyloxy, alkanesulfonyloxy, arylsulfonyloxy, alkoxycarbonyloxy, aryloxycarbonyloxy, halogen, CF₃, CCl₃, or CBr₃. Preferably, a small amount of Me 2-propylcarbonate, 2-propynyl methanesulfonate, 1,3-propanesultone, divinylsulfone, 1,4-butanediol dimethanesulfonate or cyclohexylbenzene is further incorporated.

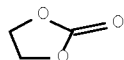
IT 96-49-1, **Ethylene carbonate**
 108-32-7, **Propylene carbonate**
 872-36-6, **Vinylene carbonate**

RL: DEV (Device component use); USES (Uses)

(nonaq. secondary battery having enhanced discharge capacity retention)

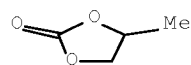
RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



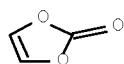
RN 108-32-7 HCAPLUS

CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



RN 872-36-6 HCAPLUS

CN 1,3-Dioxol-2-one (CA INDEX NAME)



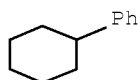
IT 827-52-1, Cyclohexylbenzene 61764-71-4, **Methyl 2-propynyl carbonate**

RL: MOA (Modifier or additive use); USES (Uses)

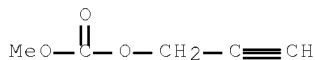
(nonaq. secondary battery having enhanced discharge capacity retention)

RN 827-52-1 HCAPLUS

CN Benzene, cyclohexyl- (CA INDEX NAME)



RN 61764-71-4 HCAPLUS
 CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)
 RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L67 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2002:314520 HCAPLUS Full-text
 DN 136:328190
 TI Nonaqueous secondary battery having enhanced discharge capacity retention
 IN Abe, Koji; Ueki, Akira; Hamamoto, Toshikazu
 PA Ube Industries, Ltd., Japan
 SO Eur. Pat. Appl., 15 pp.
 CODEN: EPXXDW

DT Patent
 LA English

FAN.CNT 3

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | EP 1199766 | A2 | 20020424 | EP 2001-124312 | 20011019 |
| | EP 1199766 | A3 | 20040602 | | |
| | EP 1199766 | B1 | 20080528 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR | | | | |
| | JP 2002134167 | A | 20020510 | JP 2000-321146 | 20001020 |
| | JP 2002203594 | A | 20020719 | JP 2000-363656 | 20001129 |
| | CN 1350343 | A | 20020522 | CN 2001-142417 | 20011019 |
| | CN 1218424 | C | 20050907 | | |
| | AT 397296 | T | 20080615 | AT 2001-124312 | 20011019 |
| | HK 1044414 | A1 | 20060428 | HK 2002-105983 | 20020815 |
| PRAI | JP 2000-321146 | A | 20001020 | | |
| | JP 2000-335946 | A | 20001102 | | |
| | JP 2000-363656 | A | 20001129 | | |

OS MARPAT 136:328190

AB A discharge capacity retention of a nonaq. secondary battery is enhanced by incorporating into its nonaq. electrolytic solution a small amount of a substituted diphenyldisulfide derivative in which each of the di-Ph groups has a substituent such as alkoxy, alkenyloxy, alkynyloxy, cycloalkyloxy, aryloxy, acyloxy, alkanesulfonyloxy, arylsulfonyloxy, alkoxycarbonyloxy, aryloxycarbonyloxy, halogen, CF₃, CCl₃, or CBr₃. Preferably, a small amount of Me 2-propylcarbonate, 2-propynyl methanesulfonate, 1,3-propanesultone, divinylsulfone, 1,4-butanediol dimethanesulfonate or cyclohexylbenzene is further incorporated.

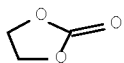
IT 96-49-1, Ethylene carbonate
 108-32-7, Propylene carbonate
 872-36-6, Vinylene carbonate

RL: DEV (Device component use)

(nonaq. secondary battery having enhanced discharge capacity retention)

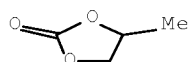
RN ~~96-49-1~~ HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



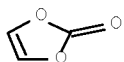
RN 108-32-7 HCAPLUS

CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



RN 872-36-6 HCAPLUS

CN 1,3-Dioxol-2-one (CA INDEX NAME)



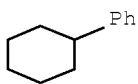
IT ~~827-52-1~~, Cyclohexylbenzene ~~61764-71-4~~, **Methyl 2-propynylcarbonate**

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(nonaq. secondary battery having enhanced discharge capacity retention)

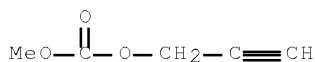
RN 827-52-1 HCAPLUS

CN Benzene, cyclohexyl- (CA INDEX NAME)



RN ~~61764-71-4~~ HCAPLUS

CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d 168 bib abs hitstr tot

L68 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2009:28460 HCAPLUS Full-text

DN 150:80945

TI Nonaqueous electrolyte solutions and secondary batteries with improved high-temperature storage stability

IN Usami, Kyohei; Hirata, Kazuki; Yamada, Manabu; Taki, Takayuki; Tomita, Atsuo; Asano, Hiroto

PA Denso Co., Ltd., Japan; Adeka Co., Ltd.

SO Jpn. Kokai Tokkyo Koho, 22pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|------------------|------|----------|-----------------|----------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | JP 2009004352 | A | 20090108 | JP 2007-304108 | 20071126 |
| PRAI | JP 2007-135825 | A | 20070522 | | |
| OS | MARPAT 150:80945 | | | | |

AB The solns. contain electrolyte salts dissolved in organic solvents, Si compds. chosen from XSiR1R2R3(OR4)nOR3SiR1R2X, XSiR1R2R3OCO2R3SiR1R2X, XSiR1R2R3OCOR5CO2R3SiR1R2X, and R6OCO2R3SiR1R2X (R1, R2 = C1-8 alkyl; R3, R4 = C2-8 alkylene; R5 = C1-8 alkylene; C2-8 alkenylene, C2-8 alkynylene, single bond; R6 = C1-8 alkyl, C2-8 alkenyl, C2-8 alkynyl; X = fluoro, C1-8 alkoxy, C2-8 alkenyloxy, C2-8 acyloxy, C1-8 sulfonyl, isocyanyl, isothianyl, cyano; n = 0-2), and optionally unsatd. cyclic carbonates, unsatd. linear carbonates, and/or unsatd. diesters. The batteries show low internal resistance and high capacity after high-temperature storage.

IT 872-36-6, **Vinylene carbonate**

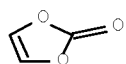
79493-91-7, **Dipropargyl carbonate** 220788-96-5

RL: MOA (Modifier or additive use); USES (Uses)

(nonaq. electrolyte solns. containing silicon compds. and optionally unsatd. carbonates or diesters)

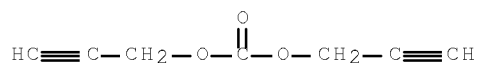
RN 872-36-6 HCAPLUS

CN 1,3-Dioxol-2-one (CA INDEX NAME)



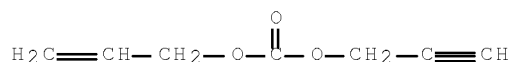
RN 79493-91-7 HCAPLUS

CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



RN 220788-96-5 HCAPLUS

CN Carbonic acid, 2-propen-1-yl 2-propyn-1-yl ester (CA INDEX NAME)



L68 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2007:505050 HCAPLUS Full-text

DN 146:444961

TI Pentafluorophenyloxy compounds, their manufacture, nonaqueous electrolytic solutions containing them, and secondary lithium batteries

IN Abe, Hiroshi; Kuwata, Takaaki; Takase, Manabu

PA Ube Industries, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 19pp.

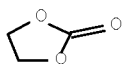
CODEN: JKXXAF

DT Patent

LA Japanese

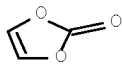
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|----------|
| PI | JP 2007112737 | A | 20070510 | JP 2005-304850 | 20051019 |
| PRAI | JP 2005-304850 | | 20051019 | | |
| OS | MARPAT 146:444961 | | | | |
| AB | C6F2OR1OR2 [I; R1 = COCO, SO, SO2; R2 = C1-12 (halo)alkyl, C3-12 (halo)cycloalkyl, C2-12 (halo)alkenyl, etc.; when R1 = COCO, R2 is aryl-free group] are manufactured by condensation of C6F5OH with R2OR1X (R1, R2 = same as above; X = halo) in the presence of bases. The electrolytic solns. contain I or (C6F5O)nY (Y = alkali metal, alkaline earth metal; n = 1, 2), preferably further contain cyclic carbonates and linear carbonates, and more preferably contain vinylene carbonate, 1,3-propanesultone, and/or alkynes. The batteries show high discharge capacity retention after repeated cycles. | | | | |
| IT | 96-49-1, Ethylene carbonate 872-36-6, Vinylene carbonate 61764-71-4, Methyl propargyl carbonate | | | | |
| RL | TEM (Technical or engineered material use); USES (Uses) (electrolytic solution; manufacture of pentafluorophenyloxy compds. as additives for nonaq. electrolytic solns. for secondary lithium batteries) | | | | |
| RN | 96-49-1 HCAPLUS | | | | |
| CN | 1,3-Dioxolan-2-one (CA INDEX NAME) | | | | |



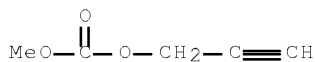
RN 872-36-6 HCAPLUS

CN 1,3-Dioxol-2-one (CA INDEX NAME)



RN 61764-71-4 HCAPLUS

CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



L68 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2005:141448 HCAPLUS Full-text
 DN 142:243601
 TI Secondary lithium battery and its nonaqueous electrolyte solution
 IN Abe, Koji; Miyoshi, Kazuhiro; Kuwata, Takaaki;
 Matsumori, Yasuo
 PA Ube Industries, Ltd., Japan
 SO PCT Int. Appl., 36 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|------------------|----------|
| FI | WO 2005015677 | A1 | 20050217 | WO 2004-JP11714 | 20040809 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | CN 1836347 | A | 20060920 | CN 2004-80022913 | 20040809 |
| | CN 100431217 | C | 20081105 | | |
| | KR 2006060683 | A | 20060605 | KR 2006-702791 | 20060209 |
| | US 20060246356 | A1 | 20061102 | US 2006-567902 | 20060210 |
| PRAI | JP 2003-291129 | A | 20030811 | | |
| | JP 2003-383406 | A | 20031113 | | |
| | WO 2004-JP11714 | W | 20040809 | | |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

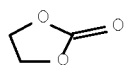
AB The battery comprised a cathode, an anode, and a nonaq. electrolyte solution having an electrolyte salt dissolved in a nonaq. solvent mixture; where the cathode is a Li composite oxide containing material, the anode is a graphite containing material; and the electrolyte solution contains a dialkyl oxalate and a vinylene carbonate and/or 1,3-propane sultone.

IT ~~96-49-1~~, **Ethylene carbonate**
~~108-32-7~~, **Propylene carbonate**

RL: DEV (Device component use); USES (Uses)
 (electrolyte solns. containing dialkyl oxalates and vinylene carbonate and/or 1,3-propane sultone for secondary lithium batteries)

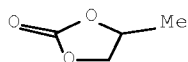
RN ~~96-49-1~~ HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)

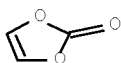


RN ~~108-32-7~~ HCAPLUS

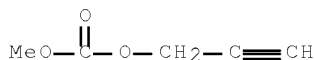
CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



IT 872-36-6, **Vinylene carbonate**
 61764-71-4, **Methyl propargyl carbonate**
 RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte solns. containing dialkyl oxalates and vinylene carbonate and/or 1,3-propane sultone for secondary lithium batteries)
 RN 872-36-6 HCAPLUS
 CN 1,3-Dioxol-2-one (CA INDEX NAME)



RN 61764-71-4 HCAPLUS
 CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
 RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L68 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2001:117401 HCAPLUS Full-text
 DN 134:165674
 TI Nonaqueous electrolyte solutions and secondary lithium batteries using the electrolyte solutions
 IN Hamamoto, Shunichi; Ueki, Akira; Abe, Hiroshi; Matsumori, Yasuo
 PA Ube Industries, Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | JP 2001043895 | A | 20010216 | JP 2000-116327 | 20000418 |
| | JP 3823683 | B2 | 20060920 | | |
| | CN 1277468 | A | 20001220 | CN 2000-122508 | 20000524 |
| | CN 1248350 | C | 20060329 | | |
| | US 6927001 | B1 | 20050809 | US 2000-577470 | 20000524 |
| PRAI | JP 1999-143222 | A | 19990524 | | |
| | JP 2000-116327 | A | 20000418 | | |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The electrolyte solns. contain a cyclic and linear carbonate ester based solvent mixture, with the difference between the highest and the lowest reduction potentials of mixture components smaller 0.4V. Preferably, the

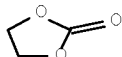
electrolyte solns. contain 0.1-4% 1,3-propanesultone and/or 0.1-4% 1,4-butanedisultone and 0.1-4% vinyl carbonate.

IT 96-49-1, **Ethylene carbonate**
 108-32-7, **Propylene carbonate**
 872-36-6, **Vinylene carbonate**
 61764-71-4, **Methyl propargyl carbonate**

RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (nonaq. electrolyte solns. with controlled reduction p.d. among solvent components for secondary lithium batteries)

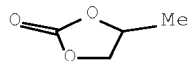
RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



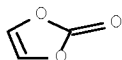
RN 108-32-7 HCAPLUS

CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



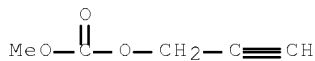
RN 872-36-6 HCAPLUS

CN 1,3-Dioxol-2-one (CA INDEX NAME)



RN 61764-71-4 HCAPLUS

CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



OSC.G 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (9 CITINGS)

=> => d bib abs hitstr tot

L78 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2007:747741 HCAPLUS Full-text

DN 147:326034

TI Functional Electrolytes

AU Abe, Koji; Hattori, Takashi; Kawabe, Kazuyuki; Ushigoe, Yoshihiro; Yoshitake, Hideya

CS Ube Industries, Limited, Ube, Yamaguchi, 755-8633, Japan

SO Journal of the Electrochemical Society (2007), 154(8), A810-A815

CODEN: JESOAN; ISSN: 0013-4651

PB Electrochemical Society
 DT Journal
 LA English

AB Certain triple-bonded compds. show a very interesting behavior in Li-ion batteries. These novel types of additives proved to improve battery performance, especially in cycle-ability. Propargyl methanesulfonate and propargyl Me carbonate show good performance among several triple-bonded compds. These triple-bonded compds. are studied in contradistinction with previously known double-bonded compds. (allyl methanesulfonate and allyl Me carbonate). The authors used MO calcns. for the selection of the additives and proved that the calculated LUMO and HOMO values agree well with the measured reduction and oxidation potentials, resp. To clarify the performance of the triple-bonded compds., electrochem. properties and cycle-ability were studied. The triple-bonded compds. are deliberately decomposed on the neg. electrode to produce a dense solid electrolyte interphase (SEI), showing an excellent improvement of cycle-ability. The nature and the component of the derived SEI were studied by XPS and Auger electron spectroscopy. These triple-bonded compds. contribute to the improved cycle-ability, because the SEI derived from the triple-bonded compds. has a thinner and denser morphol. than previously known additives.

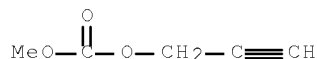
IT 61764-71-4

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(functional electrolytes)

RN 61764-71-4 HCAPLUS

CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



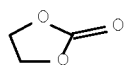
IT 96-49-1, Ethylene carbonate

108-32-7, Propylene carbonate

RL: TEM (Technical or engineered material use); USES (Uses)
 (functional electrolytes)

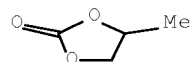
RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



RN 108-32-7 HCAPLUS

CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD

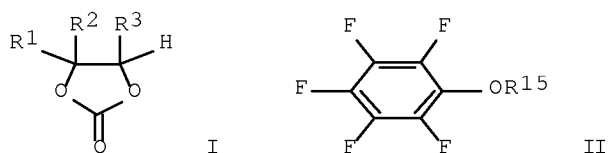
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L78 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2006:734562 HCAPLUS Full-text
 DN 145:191970
 TI Nonaqueous electrolyte solution and secondary lithium battery using the solution
 IN Abe, Koji; Kuwata, Takaaki
 PA Ube Industries, Ltd., Japan
 SO PCT Int. Appl., 47 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|------------------|----------|
| PI | WO 2006077763 | A1 | 20060727 | WO 2006-JP300278 | 20060112 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| | CN 101107745 | A | 20080116 | CN 2006-80002854 | 20060112 |
| | IN 2007CN03175 | A | 20070907 | IN 2007-CN3175 | 20070719 |
| | KR 2007097072 | A | 20071002 | KR 2007-716598 | 20070719 |
| | US 20090053598 | A1 | 20090226 | US 2007-814372 | 20070720 |
| PRAI | JP 2005-12728 | A | 20050120 | | |
| | JP 2005-12729 | A | 20050120 | | |
| | WO 2006-JP300278 | W | 20060112 | | |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 145:191970
 GI



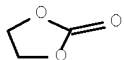
AB The electrolyte solution has an electrolyte salt dissolved in a nonaq. solvent; where the electrolyte solution further contains 0.1-10 weight% ethylene carbonate derivative I (R¹-3 = H, halo, C₂-12 alkenyl, C₂-12 alkynyl, or C₆-18 aryl group), and 0.01-10 weight% triple bond-containing compound and/or a pentafluorophenyl oxy compound II (R¹⁵ = C₂-12 alkyl carbonyl, C₂-12 alkoxy carbonyl, C₇-18 aryloxy carbonyl, or C₁-12 alkane sulfonyl group; and ≥1 H atom in R¹⁵ is substituted by halo atom or C₆-18 aryl group). The battery has a cathode containing a Li composite oxide, an anode containing graphite, and the above electrolyte solution

IT ~~96-49-1~~, **Ethylene carbonate**
 RL: DEV (Device component use); USES (Uses)

(electrolyte solns. having ethylene carbonate
 derivs. and pentafluorophenyl oxy compds. and/or triple bond-containing
 compds. for secondary lithium batteries)

RN ~~96-49-1~~ HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



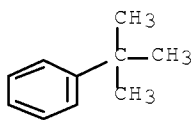
IT 98-06-6, tert-Butyl benzene 827-52-1, Cyclohexyl
 benzene 2049-95-8 **61764-71-4, Methyl 2-propynyl
 carbonate** 79493-91-7, Dipropargyl carbonate

RL: MOA (Modifier or additive use); USES (Uses)

(electrolyte solns. having ethylene carbonate
 derivs. and pentafluorophenyl oxy compds. and/or triple bond-containing
 compds. for secondary lithium batteries)

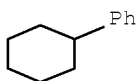
RN 98-06-6 HCAPLUS

CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



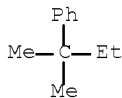
RN 827-52-1 HCAPLUS

CN Benzene, cyclohexyl- (CA INDEX NAME)



RN 2049-95-8 HCAPLUS

CN Benzene, (1,1-dimethylpropyl)- (CA INDEX NAME)

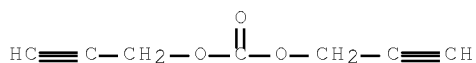


RN ~~61764-71-4~~ HCAPLUS

CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



RN 79493-91-7 HCAPLUS
 CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
 RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L78 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2005:1292320 HCAPLUS Full-text
 DN 144:38333
 TI Nonaqueous electrolyte solution for secondary lithium battery
 IN Abe, Koji; Miyoshi, Kazuhiro; Kuwata, Takaaki
 PA Ube Industries, Ltd., Japan
 SO PCT Int. Appl., 45 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|------------------|----------|
| PI | WO 2005117197 | A1 | 20051208 | WO 2005-JP9900 | 20050530 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | CA 2568519 | A1 | 20051208 | CA 2005-2568519 | 20050530 |
| | EP 1772924 | A1 | 20070411 | EP 2005-743834 | 20050530 |
| | R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, LV, MK, YU | | | | |
| | CN 1989647 | A | 20070627 | CN 2005-80024923 | 20050530 |
| | CN 100474688 | C | 20090401 | | |
| | US 20070231707 | A1 | 20071004 | US 2006-597652 | 20061127 |
| | US 7629085 | B2 | 20091208 | | |
| | ZA 2006010287 | A | 20081029 | ZA 2006-10287 | 20061208 |
| | KR 2007024663 | A | 20070302 | KR 2006-727547 | 20061228 |
| | IN 2006CN04771 | A | 20070629 | IN 2006-CN4771 | 20061228 |
| PRAI | JP 2004-159283 | A | 20040528 | | |
| | WO 2005-JP9900 | W | 20050530 | | |

OS MARPAT 144:38333

AB The electrolyte solution contains an electrolyte salt in a nonaq. solvent and contains 0.01-10% S acid ester and 0.01-10% triple bond compound of the formula R1(C.tplbond.C)pR2, R3C.tplbond.C(CR4R5)xOY1, Y2O(CR6R7)xC.tplbond.C(CR8R9)xOY3,

Y4O(CR10R11)xC.tplbond.CC.tplbond.C(CR12R13)xOY5,
 R14C.tplbond.C(CR15R16)xOCO2(CR17R18)xC.tplbond.CR19 or
 R20C.tplbond.C(CR21R22)xOWOY6 where R1 = C1-12 alkyl, C3-6 cycloalkyl, or aryl
 group; R2-R22 = H or C1-12 alkyl, C3-6 cycloalkyl, or aryl groups, p = 1 or 2,
 x = 1 or 2; R4 and R5, R6 and R7, R8 and R9, R10 and R11, R12 and R13, R15 and
 R16, R17 and R18, and R21 and R22 may form C3-6 cycloalkyl groups; W = -SO-, -
 SO2-, -COCO-; and the Y's are carboxylate ester, alkyl carbonyl, or alkyl
 sulfonyl groups.

IT 96-49-1, **Ethylene carbonate**

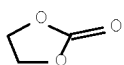
108-32-7, **Propylene carbonate**

RL: DEV (Device component use); USES (Uses)

(sulfur acid ester and alkyne compound additives in nonaq. electrolyte
 solns. for secondary lithium batteries)

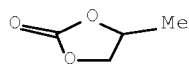
RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)



RN 108-32-7 HCAPLUS

CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



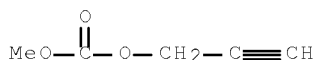
IT 61764-71-4

RL: MOA (Modifier or additive use); USES (Uses)

(sulfur acid ester and alkyne compound additives in nonaq. electrolyte
 solns. for secondary lithium batteries)

RN 61764-71-4 HCAPLUS

CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L78 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2002:273054 HCAPLUS Full-text

DN 136:312532

TI Nonaqueous electrolyte solution and secondary lithium battery using the
 solution

IN Hamamoto, Shunichi; Abe, Hiroshi; Miyoshi, Kazuhiko; Matsumori,
 Yasuo

PA Ube Industries, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 16 pp.

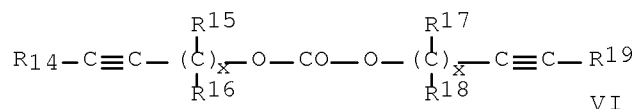
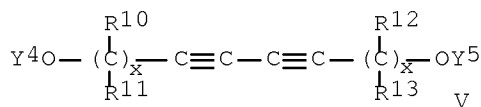
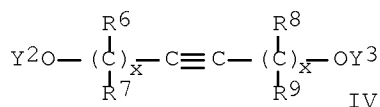
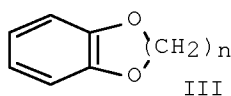
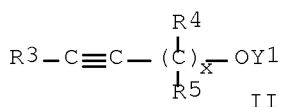
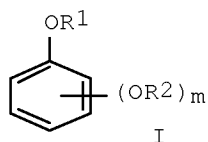
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|----------|
| PI | JP 2002110234 | A | 20020412 | JP 2000-302080 | 20001002 |
| | JP 4304404 | B2 | 20090729 | | |
| FRAI | JP 2000-302080 | | 20001002 | | |
| OS | MARPAT 136:312532 | | | | |
| GI | | | | | |



AB The battery has a Li containing multiple oxide cathode, a graphite containing anode, and a nonaq. electrolyte solution; where the electrolyte solution contains a cyclic and linear carbonate ester based solvent mixture, which also contains 0.001-0.8% alkoxy benzene derivative I or II (R1, R2 = Me, or Et, m = 1-3, R2 may differ from each other when m = 2 or 3, n = 1 or 2) and 0.1-10% alkynyl derivs. III, IV, or V (R3-19 = C1-12 alkyl, C3-6 cycloalkyl, aryl, or H; R groups connected to the same C atom may join together to form a C3-6 cycloalkyl group, Y1-4 = -COOR20, -COR20, or -SO2R20, Y1-4 may differ from each other, R20 = C1-12 alkyl, C3-6 cycloalkyl, or aryl group, x = 1 or 2).

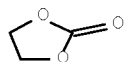
IT 96-49-1, **Ethylene carbonate**
108-32-7, **Propylene carbonate**

RL: DEV (Device component use); USES (Uses)

(alkoxy benzene derivs. and alkynyl derivs. in carbonate ester solvent mixts. for secondary lithium battery electrolytes)

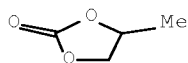
RN 96-49-1 HCAPLUS

CN 1,3-Dioxolan-2-one (CA INDEX NAME)

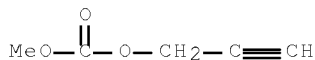


RN 108-32-7 HCAPLUS

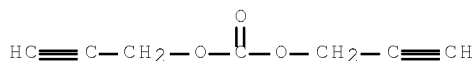
CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



IT 61764-71-4 79493-91-7, **Dipropargyl carbonate**
 RL: MOA (Modifier or additive use); USES (Uses)
 (alkoxy benzene derivs. and alkynyl derivs. in carbonate ester solvent
 mixts. for secondary lithium battery electrolytes)
 RN 61764-71-4 HCAPLUS
 CN Carbonic acid, methyl 2-propyn-1-yl ester (CA INDEX NAME)



RN 79493-91-7 HCAPLUS
 CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L78 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2002:253397 HCAPLUS Full-text

DN 136:281969

TI Nonaqueous electrolyte solution and secondary lithium battery using the
 electrolyte solution

IN Hamamoto, Shunichi; Abe, Hiroshi; Ushikoshi, Yoshihiro; Hattori, Takayuki;
 Matsumori, Yasuo

PA Ube Industries, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | JP 2002100399 | A | 20020405 | JP 2000-284790 | 20000920 |
| PRAI | JP 2000-284790 | | 20000920 | | |

OS MARPAT 136:281969

AB The electrolyte solution contains acetylene derivs. having XO(CRR')n- (X = -
 COOR", -COR", -SO2R", R, R', and R" are C1-12 alkyl, C3-6 cycloalkyl, or aryl
 groups, R and R' may also be H) group(s) attached to the triple bond C
 atom(s).

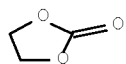
IT 96-49-1, **Ethylene carbonate**
 108-32-7, **Propylene carbonate**
 79493-91-7

RL: DEV (Device component use); USES (Uses)

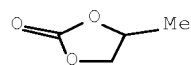
(electrolyte solns. containing acetylene derivs. for secondary lithium
 batteries)

RN 96-49-1 HCAPLUS

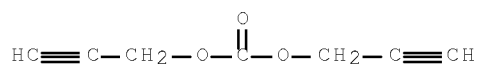
CN 1,3-Dioxolan-2-one (CA INDEX NAME)



RN 108-32-7 HCAPLUS
 CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



RN 79493-91-7 HCAPLUS
 CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L78 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN

AN 2001:814341 HCAPLUS Full-text

DN 135:360189

TI Electrolyte solutions for secondary lithium batteries and the batteries

IN Hamamoto, Shunichi; Abe, Hiroshi; Ito, Akikazu; Matsumori, Yasuo

PA Ube Industries, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | JP 2001313072 | A | 20011109 | JP 2000-129073 | 20000428 |
| | US 6479191 | B1 | 20021112 | US 2000-598112 | 20000621 |
| | CN 1322027 | A | 20011114 | CN 2000-126442 | 20000626 |
| | CN 1185746 | C | 20050119 | | |
| | HK 1041562 | A1 | 20050610 | HK 2002-103162 | 20020429 |
| PRAI | JP 2000-129073 | A | 20000428 | | |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 135:360189

AB The electrolyte solns. contain an alkyl carbonate deriv

R1C.tplbond.C(CHR2)NOCOO(CHR3)nC.tplbond.CR4, where R1-4 = C1-12 alkyl, c3-6 cycloalkyl, or aryl groups or H and n = 1 Or 2.

IT 96-49-1, **Ethylene carbonate**

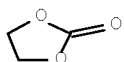
108-32-7, **Propylene carbonate**

RL: DEV (Device component use); USES (Uses)

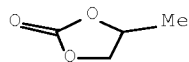
(electrolyte solns. containing diallylalkyl carbonates for secondary lithium batteries)

RN 96-49-1 HCAPLUS

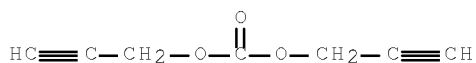
CN 1,3-Dioxolan-2-one (CA INDEX NAME)



RN 108-32-7 HCAPLUS
 CN 1,3-Dioxolan-2-one, 4-methyl- (CA INDEX NAME)



IT 79493-91-7, **Dipropargyl carbonate**
 RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte solns. containing diallylalkyl carbonates for secondary lithium batteries)
 RN 79493-91-7 HCAPLUS
 CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

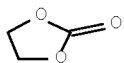
L78 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2010 ACS on STN
 AN 2001:692246 HCAPLUS Full-text
 DN 135:229392
 TI Nonaqueous electrolyte solutions and secondary nonaqueous electrolyte batteries
 IN Yamada, Manabu; Kubota, Naohiro; Takeuchi, Yasunori
 PA Denso Co., Ltd., Japan; Asahi Denka Kogyo K. K.
 SO Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|-------------------|------|----------|-----------------|----------|
| PI | JP 2001256995 | A | 20010921 | JP 2000-68400 | 20000313 |
| | JP 4093699 | B2 | 20080604 | | |
| PRAI | JP 2000-68400 | | 20000313 | | |
| OS | MARPAT 135:229392 | | | | |

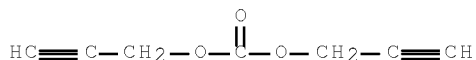
AB The electrolyte solns. have an electrolyte salt dissolved in an organic solvent and contain a O containing aliphatic compound having alkynyl and/or alkynylene groups that do not contain activated H. The compound is preferably RX(R'X')nR'', where R, R'' = C1-8 alkyl, alkenyl, or alkynyl groups, R' = C1-4 alkylene, alkenylene, or alkynylene groups, ≥1 of R, R' and R'' = alkynyl or alkynylene groups; X and X' - ether bonds, ester bonds, and/or carbonate ester bonds; n = 0 or 1. The electrolyte salts are inorg. or organic Li salts. The batteries use the electrolyte solns.

IT ~~96-49-1~~, **Ethylene carbonate**
 RL: DEV (Device component use); USES (Uses)
 (nonaq. electrolyte solns. contain oxygen containing alkynyl compds for

secondary lithium batteries)
 RN 96-49-1 HCAPLUS
 CN 1,3-Dioxolan-2-one (CA INDEX NAME)



IT 79493-91-7
 RL: MOA (Modifier or additive use); USES (Uses)
 (nonaq. electrolyte solns. contain oxygen containing alkynyl compds for
 secondary lithium batteries)
 RN 79493-91-7 HCAPLUS
 CN 2-Propyn-1-ol, 1,1'-carbonate (CA INDEX NAME)



OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

=> d his

(FILE 'HOME' ENTERED AT 13:28:28 ON 07 JAN 2010)
 SET COST OFF

FILE 'HCAPLUS' ENTERED AT 13:28:42 ON 07 JAN 2010

| | | | |
|-----|-------|---|---|
| L1 | 1 | S | US20060177742/PN OR (US2006-564852 OR WO2004-JP10194 OR JP200 |
| | | E | ABE/AU |
| L2 | 3 | S | E3 |
| | | E | ABE K/AU |
| L3 | 1867 | S | E3-E6 |
| | | E | ABE KO/AU |
| L4 | 729 | S | E3,E4,E20 |
| | | E | KOJI/AU |
| L5 | 3 | S | E3,E4 |
| | | E | KO JI/AU |
| | | E | KO J/AU |
| L6 | 65 | S | E3,E4 |
| | | E | MIYOSHI/AU |
| L7 | 2 | S | E3 |
| | | E | MIYOSHI K/AU |
| L8 | 179 | S | E3,E31 |
| | | E | KAZUHIRO/AU |
| L9 | 1 | S | E3 |
| | | E | KAZU HIRO/AU |
| | | E | KUWATA/AU |
| L10 | 1 | S | E3 |
| | | E | KUWATA T/AU |
| L11 | 100 | S | E3,E5 |
| | | E | TAKAAKI/AU |
| L12 | 2 | S | E3 |
| | | E | UBE/CO |
| L13 | 10492 | S | E41-E71 |
| L14 | 12308 | S | E3-E202 |

E E66+ALL
 L15 11441 S E2+RT OR E2-E33/PA,CS
 L16 1 S L1 AND L2-L15
 SEL RN

FILE 'REGISTRY' ENTERED AT 13:36:05 ON 07 JAN 2010

L17 26 S E1-E26
 L18 2 S 96-49-1 OR 108-32-7
 L19 1 S 872-36-6
 L20 2628 S 16.326.4/RID
 L21 STR
 L22 8 S L21 CSS SAM SUB=L20
 L23 207 S L21 CSS FUL SUB=L20
 SAV TEMP L23 LAURA564A/A
 L24 33 S L23 AND 1/NC
 L25 26 S L24 NOT (160 OR D/ELS OR 180 OR C5H4O3 OR 13C)
 L26 174 S L23 NOT L24
 L27 26 S L19,L25

FILE 'HCAPLUS' ENTERED AT 13:42:55 ON 07 JAN 2010

L28 20721 S L18
 L29 26439 S ETHYLENE CARBONATE OR PROPYLENE CARBONATE
 L30 144 S ETHYLENE GLYCOL CARBONATE OR PROPYLENE GLYCOL CARBONATE
 L31 1259 S 1 3 DIOXOLAN 2 ONE
 L32 317 S ETHYLENECARBONATE OR PROPYLENECARBONATE
 L33 28419 S L28-L32
 L34 1575 S L19
 L35 1721 S VINYLENE CARBONATE OR VINYLENECARBONATE
 L36 265 S 1 3 DIOXOL 2 ONE
 L37 1755 S L27
 L38 1116 S L33 AND L34-L37
 L39 991 S L38 AND L28 AND L34,L37
 L40 125 S L38 NOT L39

FILE 'REGISTRY' ENTERED AT 13:47:12 ON 07 JAN 2010

FILE 'HCAPLUS' ENTERED AT 13:47:12 ON 07 JAN 2010

L41 TRA L38 1- RN : 6696 TERMS

FILE 'REGISTRY' ENTERED AT 13:47:54 ON 07 JAN 2010

L42 6696 SEA L41
 L43 STR
 L44 2 S L43 SAM SUB=L42
 L45 55 S L43 FUL SUB=L42
 L46 STR L43
 L47 46 S L46 FUL SUB=L45
 L48 3 S L47 AND (C7H8O3 OR C5H6O3 OR C7H6O3)
 L49 12 S L17 AND L45
 L50 2 S L49 AND L48
 L51 3 S L48,L50

FILE 'HCAPLUS' ENTERED AT 13:58:38 ON 07 JAN 2010

L52 7 S L51 AND L38

FILE 'REGISTRY' ENTERED AT 14:08:05 ON 07 JAN 2010

L53 11 S 124330-20-7 OR 101-84-8 OR 98-06-6 OR 827-52-1 OR 462-06-6 OR
 L54 10 S 372-18-9 OR 37-11-3 OR 540-36-3 OR 321-60-8 OR 324-74-3 OR 10
 L55 21 S L53,L54
 L56 19 S L55 NOT SQL/FA
 L57 41 S C6H4F2/MF AND 46.150.18/RID

L58 8 S L57 NOT ((D OR T)/ELS OR 11C# OR 13C# OR 14C# OR C11# OR C13#
L59 4 S L58 NOT 18F#
L60 1 S L56 AND TERT PENTYL
E C17H20/MF
L61 245 S E3 AND 46.150.18/RID AND 2/NR
L62 1 S L61 AND TERT PENTYL
L63 22 S L56,L59,L62

FILE 'HCAPLUS' ENTERED AT 14:18:18 ON 07 JAN 2010

L64 3 S L52 AND L63
L65 4 S L52 NOT L64
L66 6 S L1-L16 AND L52
L67 3 S L64 AND L66
L68 4 S L65-L66 NOT L67

FILE 'REGISTRY' ENTERED AT 14:19:46 ON 07 JAN 2010

FILE 'HCAPLUS' ENTERED AT 14:20:40 ON 07 JAN 2010

SET COST ON
SET COST OFF

L69 29403 S L33-L37
L70 16 S L69 AND L51
L71 4 S L70 AND L63
L72 1 S L71 NOT L64-L68
L73 9 S L70 NOT L64-L68
L74 9 S L72,L73
L75 2 S L74 NOT BATTERY
L76 7 S L74 NOT L75
L77 6 S L76 AND L1-L16
L78 7 S L76,L77

=>